

20 April 1961

RECOMMENDED FOR: Chairman, Technical Development Board

FORWARDED: Secretary, Technical Development Board

SUBJECT: Contract for Camera Calibrator

1. THE PROBLEM:

There is a need in the Technical Intelligence Branch for an auxiliary camera calibrator to accommodate cameras fitted with normal angle and telephoto lenses. The calibrator is required in order to comply with camera calibration requirements now being submitted by OCS/CS and ID/P.

2. RECOMMENDATION:

- a. That the OCS/CS requirement that we calibrate all their cameras (this includes all State Department and others) is not discontinued.
- b. That Case Officers from ID/P areas continue to submit cameras for calibration at the rate they have in the past.
- c. That most cameras requiring calibration will be fitted with normal angle lenses and some cameras with telephoto.

3. EXPLANATION OF THE FACTS:

- a. For normal angle lenses, the present camera calibrator in TIB will register sufficient points for focal length determination but an insufficient number to determine lens distortion.
- b. For telephoto lenses, the present camera calibrator will permit the determination of neither focal length nor lens distortion.
- c. The cameras received in TIB for calibration have normal angle lenses on standard equipment and on some occasions telephoto lenses are included.

4. DISCUSSION OF THE FACTS:

- a. For the accurate determination of the lens distortion of normal angle lenses, it is desirable to have registered on the negative a minimum of five points per half radial. The present calibrator registers only two.

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5. On telephoto systems, lens distortion is negligible and, therefore, unnecessary; however, focal length is extremely critical. On the present calibrator there are no points registered on the half radial and, therefore, no solution whatever is possible. For focal length determination of telephoto lenses there must be at least one point per half radial.

6. Correction for lens distortion produced by normal angle lenses is necessary because of the following reason: In our past experience with normal angle lenses, we have discovered a focal length change between two lenses on the negative equivalent to 0.4 millimeter. This, in effect, is an angular error of over five minutes of arc. This error is critical to many of our requirements.

7. CONCLUSION:

So long as cameras fitted with many types of lenses are received by WFO/CIA for calibration, it is necessary that the job be done correctly and furthermore, in order to do the work as expeditiously as possible, it is concluded that it is necessary to purchase a special calibrator as an auxiliary to the present calibrator.

8. RECOMMENDATION:

It is recommended that the Technical Development Board approve the purchase of one normal angle camera calibrator as a companion instrument to our present Model III wide angle camera calibrator. Such an instrument can be provided by [redacted] within six months on a cost-plus-fixed fee ceiling price of [redacted] proposal of 25 April 1961 adequately describes our requirements for such an instrument and it can be incorporated as a technical specification in the contract. It is suggested that [redacted] be appointed contract monitor.

Chief, WFO

WFO/THA [redacted]

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